

U.S.S.N. 10/647,979  
Docket No. 133976-1

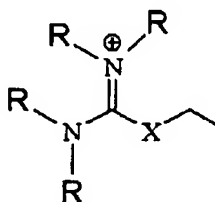
RECEIVED  
CENTRAL FAX CENTER  
JUL 30 2007

**Listing of Claims:**

1-15 (Cancelled)

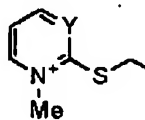
16. (Cancelled) A compound consisting of a targeting moiety directly bound to a leaving group selected from the group consisting of:

(i) groups of formula:



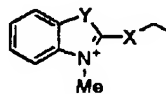
where X is S, O and R can be the same or different at each occurrence and is selected from C<sub>1</sub> to C<sub>20</sub> alkyl groups;

(ii) groups of formula:



where Y is N or CH;

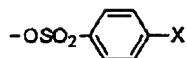
(iii) groups of formula:



where when X is S, then Y is O or S and where when X is O, then Y is S;

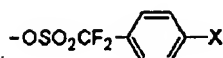
(iv) groups of formula:

U.S.S.N. 10/647,979  
Docket No. 133976-1



where X is selected from C<sub>4</sub> to C<sub>10</sub> alkylene, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, or -(Q)<sub>n</sub>OCH<sub>3</sub> where Q is C<sub>2</sub> to C<sub>6</sub> alkoxy and n = 1 to 6;

(v) groups of formula:



where X is selected from C<sub>4</sub> to C<sub>10</sub> alkylene, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, or -(Q)<sub>n</sub>OCH<sub>3</sub> where Q is C<sub>2</sub> to C<sub>6</sub> alkoxy and n = 1 to 6; and

(vi) groups of formula:



where X is selected from C<sub>4</sub> to C<sub>10</sub> alkylene, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, or -(Q)<sub>n</sub>OCH<sub>3</sub> where Q is C<sub>2</sub> to C<sub>6</sub> alkoxy and n = 1 to 6; and

wherein the targeting moiety is selected from the group consisting of proteins, glycoproteins, lectins, peptides, polypeptides, saccharides, vitamins, steroids, steroid analogs, hormones, cofactors, nucleosides, nucleotides, and polynucleotides.

17. (Cancelled) A compound as in claim 16 wherein the leaving group is bound to a solid support.

18. (Currently amended) A method of producing an imaging agent, said method comprising the steps of:

providing a compound consisting of a targeting moiety directly bound to a leaving group;

U.S.S.N. 10/647,979  
Docket No. 133976-1

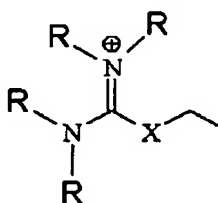
contacting the compound with a solution containing a detectable species to form the imaging agent having solubility that differentiates the compound from the imaging agent;

separating the imaging agent from the compound by differential solubility; and

recovering the imaging agent;

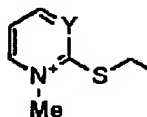
wherein the leaving group is selected from the group consisting of:

(i) groups of formula:



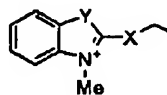
wherein X is S, O and R can be the same or different at each occurrence and is selected from C<sub>1</sub> to C<sub>20</sub> alkyl groups;

(ii) groups of formula:



wherein Y is N or CH;

(iii) groups of formula:



wherein

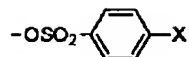
X is S and Y is O; or

U.S.S.N. 10/647,979  
Docket No. 133976-1

X is S and Y is S; or

X is O and Y is S.

(iv) groups of formula:

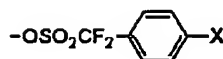


wherein X is selected from C<sub>4</sub> to C<sub>10</sub> alkylene, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, and -(Q)<sub>n</sub>OCH<sub>3</sub>;

Q is C<sub>2</sub> to C<sub>6</sub> alkoxy; and

n = 1 to 6;

(v) groups of formula:



wherein

X is selected from C<sub>4</sub> to C<sub>10</sub> alkylene, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, and -(Q)<sub>n</sub>OCH<sub>3</sub>;

Q is C<sub>2</sub> to C<sub>6</sub> alkoxy; and

n = 1 to 6;

(vi) groups of formula:



wherein

X is selected from C<sub>4</sub> to C<sub>10</sub> alkyl, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, and -(Q)<sub>n</sub>OCH<sub>3</sub>;

Q is C<sub>2</sub> to C<sub>6</sub> alkoxy; and

n = 1 to 6; and

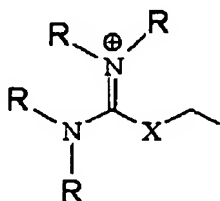
U.S.S.N. 10/647,979  
Docket No. 133976-1

wherein the targeting moiety is selected from the group consisting of peptides, saccharides, vitamins, steroids, steroid analogs, hormones, cofactors, nucleosides, nucleotides, and polynucleotides.

19. (Cancelled) A method as in claim 18 wherein the step of providing a compound comprises providing a compound wherein the leaving group is bound to a solid support.

20. (Original) A method as in claim 18 wherein the step of contacting the compound with a solution containing the detectable species comprises contacting the compound with a solution containing  $^{18}\text{F}$ .

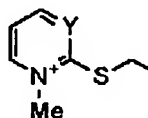
21. (withdrawn) A compound according to claim 16, wherein the leaving group is a group of formula



where X is S or O; and

R can be the same or different at each occurrence and is selected from  $\text{C}_1$  to  $\text{C}_{20}$  alkyl groups.

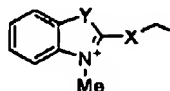
22. (withdrawn) A compound according to claim 16, wherein the leaving group is a group of formula



where Y is N or CH.

U.S.S.N. 10/647,979  
Docket No. 133976-1

23. (withdrawn) A compound according to claim 16, wherein the leaving group is a group of formula



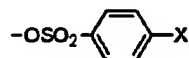
wherein

X is S and Y is O; or

X is S and Y is S; or

X is O and Y is S.

24. (currently amended) A method according to claim 18, wherein the leaving group is a group of formula



wherein

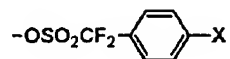
X is selected from C<sub>4</sub> to C<sub>10</sub> alkyl, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, and -(Q)<sub>n</sub>OCH<sub>3</sub>;

Q is C<sub>2</sub> to C<sub>6</sub> alkoxy; and

n is 1 to 6.

U.S.S.N. 10/647,979  
Docket No. 133976-1

25. (withdrawn) A compound according to claim 16, wherein the leaving group is a group of formula



wherein

X is selected from C<sub>4</sub> to C<sub>10</sub> alkylene, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, and -(Q)<sub>n</sub>OCH<sub>3</sub>;

Q is C<sub>2</sub> to C<sub>6</sub> alkoxy; and

n is 1 to 6.

26. (withdrawn) A compound according to claim 16, wherein the leaving group is a group of formula



wherein X is selected from C<sub>4</sub> to C<sub>10</sub> alkylene, -CN, -N<sup>+</sup>(CH<sub>3</sub>)<sub>3</sub>, or -(Q)<sub>n</sub>OCH<sub>3</sub>;

Q is C<sub>2</sub> to C<sub>6</sub> alkoxy; and

n is 1 to 6.